

WHAT IS CLAIMED IS:

1. A coordinate input apparatus for calculating a coordinate corresponding to a position of a light spot with which an input screen is irradiated, comprising:

5 a sensor array configured in such a manner that a plurality of optical conversion elements is arranged;

coordinate computing means for successively calculating coordinate data of the light spot from the output of the sensor array; and

10 determining means for determining a readout portion of the sensor array from the coordinate data whose ordinal number precedes a predetermined ordinal number, at the time of calculating the coordinate data of the predetermined ordinal number,

15 wherein the coordinate computing means calculates the coordinate data of the ordinal number based on the output from the readout portion determined by the determining means.

20 2. A coordinate input apparatus according to claim 1, wherein the plurality of optical/electrical conversion elements of the sensor array is linearly arranged, and wherein the coordinate data of the light spot can be read out with each of blocks into which the  
25 sensor array is split as a unit.

3. A coordinate input apparatus according to

claim 1, wherein the coordinate computing means calculates the coordinate data from a peak value of the output of the sensor array.

5           4. A coordinate input apparatus according to claim 2, wherein the coordinate computing means characterized by performing focus adjustment so that the width of the image of the light spot is several times as large as the pixel of the optical/ electrical conversion element  
10 calculates the coordinate data from the peak value of the output of the sensor array.

          5. A coordinate input apparatus according to any one of claims 1 to 4, wherein coordinate computing  
15 means characterized by performing focus adjustment so that the width of the image of the light spot is several times as large as the pixel of the optical/electrical conversion element calculates the coordinate data from the peak value of the output of  
20 the sensor array.

          6. A coordinate inputting method of applying irradiation light to a predetermined position on an image input screen by operation of a designation device  
25 to generate a light spot, and obtaining coordinate data of the light spot by optical/electrical conversion of a sensor array, comprising steps of:

determining a readout portion of the sensor array from the coordinate data whose ordinal number equals a number immediately before a predetermined ordinal number, at the time of calculating coordinate data of the predetermined ordinal number, and

obtaining an output partially from a predetermined number of optical/electrical conversion elements corresponding to the readout portion determined in the sensor array, calculating the coordinate data of the predetermined ordinal number, and generating a coordinate output signal corresponding to a predetermined position of the coordinate input screen.

7. A coordinate inputting method according to claim 6, wherein the each photo-electric element is linearly arranged, and wherein readout is performed with each predetermined block into which the sensor array is split as a unit.

8. A coordinate inputting method according to claim 6, wherein the coordinate data is calculated from the peak value of the output of the sensor array.

9. A coordinate inputting method according to claim 7, wherein the coordinate data is calculated from the peak value of the output of the sensor array.

10. A coordinate inputting method according to any one of claims 6 to 9, wherein focus adjustment is performed so that the image of the light spot has an image width several times as large as the pixel of the optical/electrical conversion element.

11. An information display system configured such a manner as to comprise:

a coordinate input apparatus applying light from a designation device to a coordinate input screen to generate a light spot, and detecting the light spot to generate a coordinate output signal corresponding to a predetermined position of the coordinate input screen; and

a display projecting information inputted by the coordinate input apparatus onto the coordinate input screen, based on the coordinate output signal,

the coordinate input apparatus, comprising:

a sensor array configured in such a manner that a plurality of optical/electrical conversion elements is arranged;

coordinate computing means for successively calculating coordinate data of the light spot from the output of the sensor array; and

determining means for determining a readout portion of the sensor array from the coordinate data whose ordinal number precedes a predetermined ordinal

number, at the time of calculating the coordinate data of the predetermined ordinal number,

wherein the coordinate computing means calculates the coordinate data of the predetermined ordinal  
5 number, based on the output from the readout portion determined by the determining means.

12. An information display system according to claim 11, wherein the sensor array is configured in  
10 such a manner that a plurality of photo-electric elements is linearly arranged, and readout is possible with each predetermined block into which the sensor array is split as a unit.

13. An information display system according to claim 11, wherein the coordinate computing means  
15 calculates the coordinate data from the peak value of the output of the sensor array.

14. An information display system according to claim 12, wherein the coordinate computing means  
20 calculates the coordinate data from the peak value of the output of the sensor array.

15. An information display system according to claim 11, wherein the designation device has light  
25 emission control means for controlling an emission

state of irradiating lights, and wherein focus adjustment is performed so that the image of the light spot has an image width several times as large as the pixel of the optical/electrical conversion element.

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16. An information display system according to claim 12, wherein the designation device has light emission control means for controlling an emission state of irradiating lights, and wherein focus  
10 adjustment is performed so that the image of the light spot has an image width several times as large as the pixel of the optical/electrical conversion element.

17. An information display system according to  
15 claim 13, wherein the designation device has light emission control means for controlling an emission state of irradiating lights, and wherein focus adjustment is performed so that the image of the light spot has an image width several times as large as the  
20 pixel of the optical/electrical conversion element.

18. A computer readable memory for storing a computer program executing computers, wherein the computer is the coordinate computing means or  
25 determining means according to claim 1.

19. A computer readable memory for storing a

computer program executing computers, wherein the computer is the coordinate computing means or determining means according to claim 3.

5           20. A computer readable memory for storing a computer program executing computers, wherein the computer is the coordinate computing means or determining means according to claim 4.

10           21. A computer readable memory for storing a computer program executing the steps of the method according to claim 5.

15           22. A computer readable memory for storing a computer program executing the steps of the method according to claim 6.

20           23. A computer readable memory for storing a computer program executing the steps of the method according to claim 7.

25           24. A computer readable memory for storing a computer program executing the steps of the method according to claim 8.

25           25. A computer readable memory for storing a computer program executing the steps of the method

according to claim 9.

26. A computer readable memory for storing a  
computer program executing the steps of the method  
5 according to claim 10.

27. A coordinate input apparatus for calculating  
a coordinate corresponding to a position of a light  
spot with which an input screen is irradiated,  
10 comprising:

a sensor array configured in such a manner that a  
plurality of optical/electrical conversion elements is  
arranged;

coordinate computing means for successively  
15 calculating coordinate data of the light spot from the  
output of the sensor array; and

determining means for determining a readout-start  
portion of the sensor array from the coordinate data  
whose ordinal number precedes a predetermined ordinal  
20 number, at the time of calculating the coordinate data  
of the predetermined ordinal number,

wherein the coordinate computing means calculates  
the coordinate data of the ordinal number based on the  
output from the readout-start portion determined by the  
25 determining means.

28. A coordinate input apparatus according to



claim 27,

wherein the determining means further predicts  
order of readout of the sensor array predicted from the  
coordinate data whose ordinal number precedes the  
5 predetermined ordinal number, and

if there is no output from the readout-start  
portion determined by the determining means,

readout is performed in accordance with the order.

10 29. A coordinate inputting method of applying  
irradiation light to a predetermined position on an  
image input screen by operation of a designation device  
to generate a light spot, and obtaining coordinate data  
of the light spot by optical/electrical conversion of a  
15 sensor array, comprising steps of:

determining a readout-start portion of the sensor  
array from the coordinate data whose ordinal number  
equals a number immediately before a predetermined  
ordinal number, at the time of calculating coordinate  
20 data of the predetermined ordinal number; and

obtaining an output partially from a predetermined  
number of optical/electrical conversion elements  
corresponding to the readout portion determined in the  
sensor array, calculating the coordinate data of the  
25 predetermined ordinal number, and generating a  
coordinate output signal corresponding to a  
predetermined position of the coordinate input screen.

30. A coordinate inputting method according to  
claim 29, in the determination, order of readout of the  
sensor array predicted from the coordinate data whose  
ordinal number precedes the predetermined ordinal  
5 number is further predicted, and

if there is no output from the readout-start  
portion determined by the determining means,  
readout is performed in accordance with the order.

10 31. A program for executing processing procedures  
of the coordinate inputting method according to claim  
6.

32. A computer readable memory storing a program  
15 for executing processing procedures of the coordinate  
inputting method according to claim 29.

33. A program for executing processing procedures  
of the coordinate inputting method according to claim  
20 29.